Abstract

Forecasting can provide a description of the future that most closely to reality. Forecasting the future data could be done by using past historical data by studying the pattern to produce an optimal forecasting model. This method is called time series data forecasting. Evolutionary Algorithms (EAs) can be used to build the forecasting model. The advantages of EAs is able to generate many solutions at once so the prediction model became more vary.

Evolution Staregies (ES) as a type of EAs is often used to solve optimization problems. Differential Evolution (DE) is belongs to the class of ES. DE has a similar scheme with ES. The most significant difference is in the process of generating new individuals which DE is semi-directed whereas ES is random. This final project is created to analyse and compare the performance between ES and DE in terms of speed and accuracy in time series data forecasting using inflation rate forecasting in Indonesia as a case study.

Based on the observations, the forecasting accuracy of DE on time series data forecasting is better than ES. DE is also much faster than ES in building an optimal forecasting function. But for data with high-level fluctuations and unpredictable as inflation rate in Indonesia, using the time series data forecasting by implementing DE and ES is less able to adapt the pattern of historical data so that the result of forecastings are less than optimal.

Keywords: time series data forecasting, Evolutionary Algorithms (EAs), Evolution Staregies (ES), Differential Evolution (DE)